

Cryogenic Propellant Storage and Transfer (CPST)

Canceled Technology Project (2011 - 2019)



Project Introduction

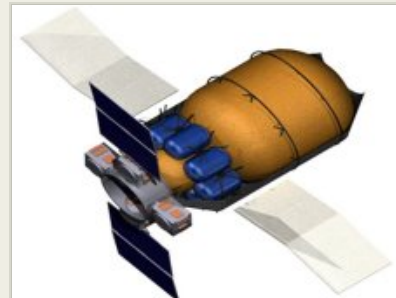
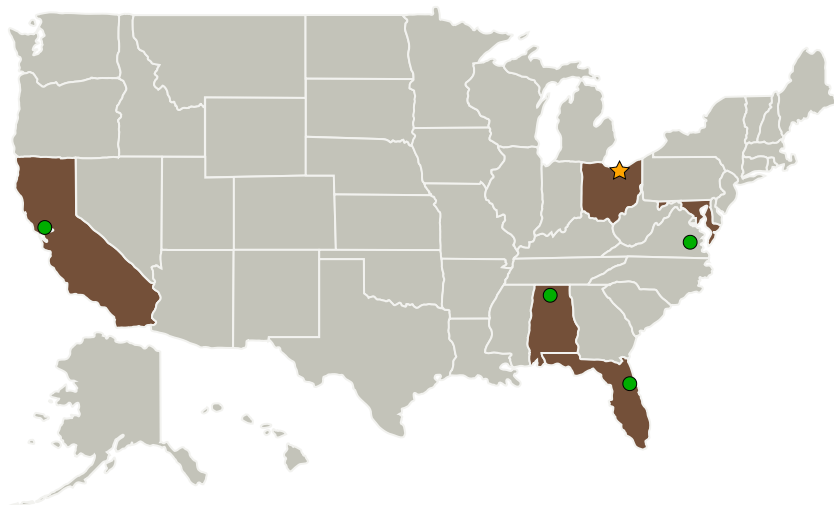
Space Flight Demonstration development has been canceled in favor of a ground test bed development for of passive/active cryogenic propellant storage, transfer, and gauging systems in space for infusion into future extended in-space missions.

The Cryogenic Propellant Storage and Transfer project will demonstrate the capability to safely and efficiently store, transfer and measure cryogenic propellants, including liquefied and super-cooled fuels and oxidizers. These advances will lead to development of next-generation space transportation systems capable of managing large propellant volumes over long time periods necessary for deep space travel. NASA's Human Exploration and Operations Mission Directorate is a primary customer and new opportunities will follow for the agency's industry partners. CPST: Key Mission Facts - The Cryogenic Propellant Storage & Transfer mission will demonstrate technologies required for the development of in-space cryogenic systems to support exploration beyond low-Earth orbit. - The mission will support multiple human architecture elements - It is designed to demonstrate long-duration, storage and transfer of cryogenic propellants. - It will demonstrate an accurate and reliable gauging system for tracking stored propellant.

Anticipated Benefits

N/A

Primary U.S. Work Locations and Key Partners



Project Image Cryogenic Propellant Storage and Transfer (CPST)

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Organizations Performing Work	Role	Type	Location
★ Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
● Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California
● Kennedy Space Center(KSC)	Supporting Organization	NASA Center	Kennedy Space Center, Florida
● Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia
● Marshall Space Flight Center(MSFC)	Supporting Organization	NASA Center	Huntsville, Alabama

Primary U.S. Work Locations	
Alabama	California
Florida	Maryland
Ohio	

Project Transitions

▶ **October 2011:** Project Start

◻ **June 2019:** Project canceled because merged or otherwise absorbed into another project
Rationale: Project canceled because merged or otherwise absorbed into another project

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Glenn Research Center (GRC)

Responsible Program:

Technology Demonstration Missions

Project Management

Program Director:

Trudy F Kortes

Program Manager:

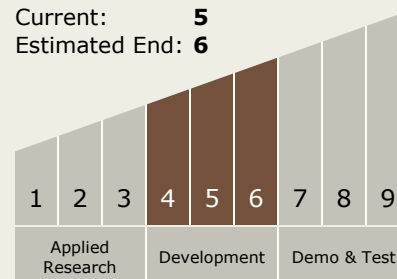
Tawnya P Laughinghouse

Project Manager:

Susan M Motil

Technology Maturity (TRL)

Start: **4**
 Current: **5**
 Estimated End: **6**



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Images



15108.jpg

Project Image Cryogenic Propellant Storage and Transfer (CPST)
(<https://techport.nasa.gov/image/1196>)

Technology Areas

Primary:

- TX01 Propulsion Systems
 - └ TX01.1 Chemical Space Propulsion
 - └ TX01.1.1 Integrated Systems and Ancillary Technologies